



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/019,606	05/01/2002	Andrew Hill	S1011/20126	8030
3000	7590	10/20/2004	EXAMINER	
CAESAR, RIVISE, BERNSTEIN, COHEN & POKOTILOW, LTD. 11TH FLOOR, SEVEN PENN CENTER PHILADELPHIA, PA 19103-2212			BELL, BRUCE F	
			ART UNIT	PAPER NUMBER
			1746	

DATE MAILED: 10/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/019,606	<b>Applicant(s)</b> HILL, ANDREW	
	<b>Examiner</b> Bruce F. Bell	<b>Art Unit</b> 1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 13-24 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 13, 14 and 16-22 is/are rejected.
- 7) ☒ Claim(s) 15 and 23 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 May 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>07/03/2002</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Specification***

The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### **Arrangement of the Specification**

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading.

The following Section Heads are not presently set forth in applicant's instant specification:

- (a) TITLE OF THE INVENTION.
- (b) BACKGROUND OF THE INVENTION.
- (c) BRIEF SUMMARY OF THE INVENTION.
- (d) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (e) DETAILED DESCRIPTION OF THE INVENTION.
- (f) CLAIM OR CLAIMS (commencing on a separate sheet).
- (g) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).

Applicant's are requested to place the above Section Heads in the appropriate places in their instant specification.

### ***Claim Objections***

1. Claim 22 is objected to because of the following informalities: Claim 22 sets forth 10 A.m<sup>2</sup>. The examiner believes that this should be 10 A/m<sup>2</sup>.
2. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 1746

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 13, 14, 16, 17, 19, 20-22, 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Hayfield (4422917).

Hayfield discloses a  $\text{TiO}_x$  electrode wherein x is from 1.55 to 1.95. See abstract.

The  $\text{TiO}_x$  electrode is shown in the Examples to be made of tubular form and that a Titanium spring is applied to the internal surface of the tubular electrode to establish electrical contact with the tube and for external electrical communications with the tube. See Example 1. The examples further show that the current density of the electrode is greater than  $10 \text{ A/m}^2$ , and that the overpotentials of the titanium vary less than 200 mV. See in particular Example 4. The tubular electrode dimensions are 12 mm OD X 8 mm ID X 100 mm long. See Example 1. The apparatus of Hayfield is an electrolytic cell and has brine being introduced into the cell and NaCl being directed out of the cell. See example 16.

The prior art of Hayfield therefore anticipates the applicant's instant invention as set forth in the instant claims.

The recitation in the instant claims with respect to the electrically conductive member having a conductivity at least two orders of magnitude higher than that of the body appears to be inherent in the materials used in making the electrode, since both Hayfield and the applicant' use a Titanium Oxide tube with a Titanium spring. Further the recitation with respect to the conductor being of a valve member is met by the titanium spring, since titanium is a valve metal. The

recitation in the claims with respect to the apparatus being coupled to a source of effluent or water is set forth in example 16 where brine is introduced into the cell and the pollutants are considered to be the NaCl being removed from the cell.

The recitation with respect to the apparatus being a redox type is also met since an electrolytic cell is a redox type cell.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hayfield (4422917).

Hayfield is as disclosed above in the 35 USC 102 rejection above.

Hayfield does not disclose that the tube is at least 200 mm long.

The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the instant invention was made because even though the prior art does not disclose the 200 mm long tubular body, one having ordinary skill in the art at the time the invention was made would have had the ability and knowledge to know that the electrode length would be dependent on the particular application in which the electrode was to have been used. Therefore, the prior art of Hayfield renders the applicant's instant invention as obvious for the reason set forth above.

***Allowable Subject Matter***

5. Claims 15 and 23 are allowable over the prior art of record.
6. Claims 15 and 23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
7. The following is a statement of reasons for the indication of allowable subject matter: The prior art of record fails to teach and/or suggest the conductor means in an elongate hollow tube wherein the conductor means has separate conductors in contact with the inner wall surface of the tubular body at longitudinally spaced apart locations. Further a soil remediation system containing an electrode as set forth is also not taught or suggested.

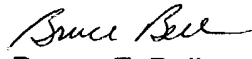
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruce F. Bell whose telephone number is 571-272-1296. The examiner can normally be reached on Monday-Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1746

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BFB  
October 18, 2004

  
Bruce F. Bell  
Primary Examiner  
Art Unit 1746